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A NEW DIPLOPOD GENUS AND SPECIES FROM GEORGIA (POLYDESMIDA: XYSTODESMIDAE)[1]

By Richard L. Hoffman
Radford College, Radford, Virginia

The millipeds of the Piedmont and Coastal Plain of the southeastern United States are as poorly known as those of any comparable area in the world, probably because these regions, so arid and unproductive during the summer months, have only recently been visited during the cooler seasons by a collector interested in obtaining samples of the diplopod fauna.

During the years 1958–61, my good friend Leslie Hubricht resided at Savannah and Atlanta, Georgia, and made these two cities the focal points for numerous excursions during which he generously picked up millipeds for me. Since his collections represent a year-round sampling, I am fortunate in having a fairly good representation of Georgia species. It has been possible so far to study only a part of this rich material, chiefly members of the large and diverse family Xystodesmidae, but the existence of an interesting endemic fauna has already been revealed.

The most characteristic xystodesmid genera occurring in Georgia are *Cleptoria*, *Dynoria*, *Dicellarius*, *Pachydesmus*, *Cherokia* and *Stelgipus*. Most of these genera are represented by several species and will be treated in revisionary studies now in preparation (synopses of *Cherokia* and *Pachydesmus* have already been published). In addition, there are at hand several unnamed species which do not fit into any of the established genera and which, because of their isolated position, can be put on record singly. The following description accounts for one of these disjunct genera which seems to be endemic to central Georgia.

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Family Xystodesmidae Cook

Lyrranea, new genus

Type species: *Lyrranea persica,* new species.

Diagnosis: A genus of large, robust xystodesmids belonging in the general group of *Sigmoria, Cleptoria, Dynoria* and *Stelgipus,* with the following diagnostic characters: Head smooth and polished, epicranial suture distinct and with a single row of punctures, but not bifurcate ventrally. Facial setae reduced, with only 2-2 frontals detectable, aside from the usual clypeal and labral series. Genae convex, with prominent deep, median impressions. Antennae moderate in length, with four small terminal sensory cones.

Body above average size for the family, robust, broad, the width/length ratio about 25%. Collum elongated laterally, the ends extending well below level of following paranota. Tergites prominently sculptured, surface of metatergites and posterior part of prozonites vermiculate rugulose. Interzonal constriction not developed across dorsum of segments, the pro- and metatergites essentially isoplanar. Paranota broad, moderately depressed, all of the anterior corners rounded, the posterior corners caudally produced on segments posterior to the 6th, the posterior edges not margined. Ozopores in normal sequence, opening dorsally near the midlength of elongate, slender peritremata. Scapulorae distinct and marginal on most segments.

Sterna of metazonites elevated into podosterna, sloping upward from the interzonal suture to form an acute, overlapping rim between the posterior pair of legs, the surface essentially smooth and flat except for being produced into distinct, acute, subcoxal spines. Sides of segments unmodified. Stigmata similar in size, shape and location, the rims only slightly elevated. Sterna of segments 4 and 6 each with a pair of low paramedian processes, sternum of segment 5 with two pairs of subconic tubercules.

Coxae and prefemora of legs with acute distal spines. Pretarsi long and bisinuately curved, the upper surface medially carinate.

Gonopod aperture large, oval, its posterior and lateral edges elevated into a distinct but low marginal rim. Gonopods short and massive, the coxae subglobose and larger than the telopodites, without coxal apophyses. Prefemora crassate, densely setose, without traces of prefemoral processes. Distal, glabrous, parts of telopodite lamellate, divided into two slender subequal branches which basally form a deep concavity. The dorsal branch is the smaller and carries the seminal groove in nearly a straight line from its end down to the base of prefemur. The ventral branch is larger, setose on its ventral surfaces, and presumably functions as a solenophore.

Characters of the female sex unknown.

Classification: *Lyrranea* is apparently related most closely to three other local genera occurring in Georgia and South Carolina: *Dynoria, Cleptoria* and *Stelgipus.* These groups have the following characteristics in common, and perhaps are worthy of a formal tribal recognition:

1. Short, stout, massive gonopods.
2. Loss of nearly all of the normal cranial setae.
3. Elongation of the collum laterally.
4. Development of subcoxal sternal spines.
5. Prominent, rugulose tergal texture.

In two of these genera, *Cleptoria* and *Stelgipus*, the telopodite of the gonopod terminates simply, there being no traces of branching, or the formation of a distinct solenomerite. In *Dynoria*, however, the telopodite is distally bifid (in *D. medialis*) or even trifid (in *D. icana;* illustrations of these gonopods are planned for early publication), one of the branches being small, thin, and laminate and carrying the seminal groove. As seen in mesial aspect, this solenomerite branch in either case is the *ventral* branch, so that the seminal groove must, upon leaving the prefemur, run *obliquely distolaterad* across the telopodite to gain access to the base of the solenomerite. In *Lyrranea,* on the other hand, the solenomerite is the *dorsal* branch of the telopodite, and this entire segment of the gonopod is very much shortened and more massive in appearance. I think there can be no doubt that *L. persica* is generically distinct from *D. icana.*

Lyrranea persica, new species
(Figs. 1–4)

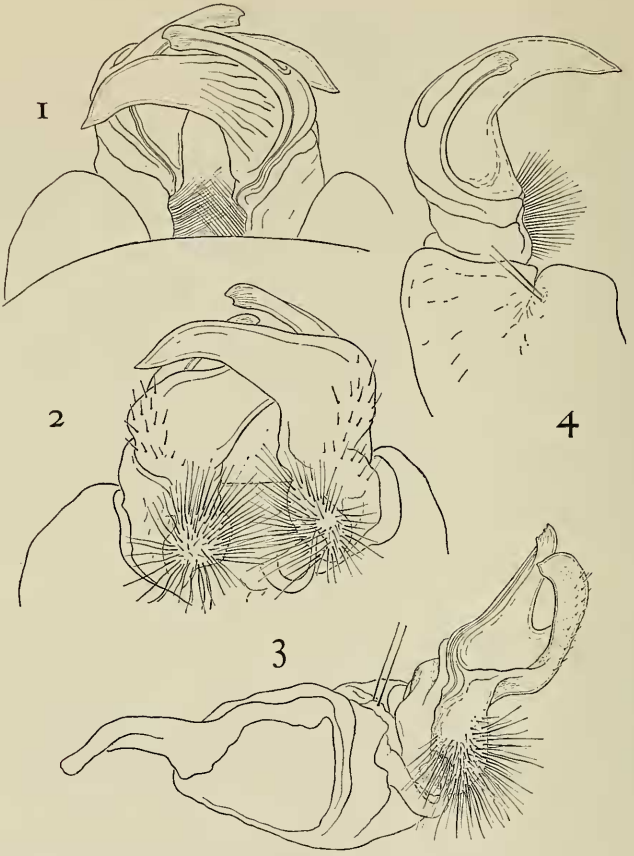
Holotype: Adult male, U. S. Nat. Mus. No. 2929(2-652), from a wooded hillside, 3 miles west of Fort Valley, Peach County, Georgia; collected 24 April 1960 by Leslie Hubricht.

Diagnosis: With the characters of the genus. Easily recognized by the combination of (1) spined sterna, (2) broad collum, (3) vermiculately rugulose tergal texture, and (4) short, massive, bilobed and basally cupulate gonopods.

Description of holotype: Length about 43 mm, greatest width 10.6 mm; width/length ratio about 25 per cent. Paranota only slightly depressed, moderately broad, producing a moderate height/width ratio of 61 per cent at midbody. Body broad, robust, approximately parallel-sided between segments 4 and 15, narrowing abruptly at both ends as indicated by the following width values:

Collum	7.8 mm	10th	10.6 mm
2nd	9.5	12th	10.6
4th	10.2	14th	10.5
6th	10.6	16th	9.4
8th	10.6	18th	6.4

Color in life unknown. Preserved specimen (after two years in alcohol) with dorsal surface of prozonites and median area of metatergites dark brown, almost black. Both anterior and posterior corners of paranota, a transverse band on caudal margin of tergites, antennae, legs, and tip



Figs. 1–4. *Lyrranea persica*, new species. Fig. 1—Gonopods of male holotype, in situ, anterior or dorsal aspect. Fig. 2—Gonopods of male holotype, in situ, posterior or ventral aspect. Fig. 3—Left gonopod, mesial aspect. Fig. 4—Left gonopod, dorsal aspect.

of epiproct yellowish. Ventral and lateral surfaces of segments probably sordid whitish-gray in life.

Head capsule normal in appearance, oval, convex, smooth and polished; width across genal apices 5.0 mm. Epicranial suture short, forming a slightly impressed groove with a single row of indistinct punctures, not bifurcate ventrally. Interantennal isthmus broad (1.7 mm) and smooth. Genae not margined laterally, convex, with very prominent median impression, this becoming broader and deeper ventrally. Antennal sockets with distinct marginal rims medially and dorsally.

Facial setae apparently considerably reduced, no trace of the vertigial, interantennal, and subantennal setae can be detected. *Frontal* 2-2, the outermost seta of each pair located in a slight depression at lower end of the genal region; no genal setae present; *clypeal* about 10-10; *labral* about 12-12, the setae of the last two series compound and irregularly placed, as usual.

Antennae moderate in length (8.0 mm) and slender, reaching back to middle of paranota of segment 3. Article 1 broadest, short, globose, glabrous except for two macrosetae. Articles 2–6 approximately equal in length (6th slightly shorter than the others) and similar in shape, all moderately clavate distally. Article 7 small, as broad as long, conic-cylindric, apically truncate, its distal edge not inturned between the four small terminal sensory cones. Antennae nearly glabrous proximally, becoming more densely invested distally, each article with a terminal whorl of 3 or 4 macrosetae; article 6 covered with fine, short, procumbent setae.

Collum broad, elongate-trapezoidal in outline, both anterior and posterior edges tapering about evenly laterad, the lateral ends prolonged ventrad about 1.0 mm beyond paranota of 2nd segment; anterior marginal ridge unusually prominent and elevated, sharply defined up to level of the mandibular-cranial articulation, ventrally setting off lateral ends of collum but not attaining the rear edge, latter slightly emarginate-sinuous just before the end.

Tergites of segments 1–4 essentially smooth, those of remaining segments prominently vermiculate-rugose, including posterior strip of the prozonites. Numerous microtubercules, with tiny erect setae, visible on the metatergites, tending to form 3 to 5 irregular transverse rows; usually only the caudalmost row on the paranota are at all distinct. Paranota rather broad, depressed but interrupting slope of mid-dorsum; peritremata elongate, slender, distinctly set off from discal surface of paranota, the submarginal depression extending to caudal edge. Ozopores opening dorsally, at about the midlength of each peritreme, with the usual distribution. Prozonites and metazonites nearly isoplanar dorsally, separated by a slight depression the anterior edge of which is sharply defined, this interzonal constriction is longitudinally costulate dorsally, the ridges merging into the texture of the metatergites as elongate rugae.

Segments 2–4 similar in shape and texture, the paranota broadly overlapping, depressed, and projecting cephalad, both anterior and posterior corners broadly rounded, scapulorae distinct, submarginal toward the body. Paranota of segment 5 more nearly transverse and less depressed, but otherwise similar to the preceding.

Segments 6–14 similar, the paranota essentially transverse, anterior corners broadly rounded, the posterior corners at first rectangular, then progressively produced caudally, the caudal edges remaining straight. Scapulorae distinct, sharply defined on the anterior paranotal arc but becoming submarginal toward the body and exposing front surface of the

paranotal base as seen in dorsal aspect. Segments 15–19 decreasing in width gradually, owing to reduction of the paranota, which become more horizontal and caudally produced. Ozopores of these segments retain their original median location, and do not tend to occur more caudally along the peritreme. Paranota of segment 18 form elongate subtriangular lobes which extend caudally as far as tips of paranota of segment 19, the latter small, short, with suboblique inner edges. Texture of caudalmost tergites more pronounced than on anterior segments.

Epiproct evenly conical in dorsal aspect, its surface smooth and polished, and with the typical setal arrangement. Paraprocts essentially flat and smooth, a little wrinkled near the ventrolateral corners; the median paraproctal seta set on a small discal tubercule removed from the compressed and elevated mesial rims. Dorsal paraproctal seta set on the broadest part of the rim, near the upper end. Hypoproct a broadly oval, convex plate, its surface smooth and polished, without a distinct median apical projection, the paramedian setiferous tubercules large and extending slightly beyond hyproctal edges.

Sides of segments unmodified; caudal edge of each metazonite with a fine but distinct raised rim preceded by a submarginal depression extending from underside of paranota to top of posterior coxal sockets. Interzonal constriction becoming broad and distinct down sides, shallow but with anterior edge slightly elevated; surface of the constriction smooth. Stigmata of moderate size, similar in shape on midbody and posterior segments (the anterior stigma larger and more triangular on anterior segments), elongate-oval, with slightly elevated but not flared rims. Both stigmata about equally separated from the adjacent coxal sockets.

Sternal areas of metazonites modified as podosterna, the intercoxal space sloping upward from the interzonal suture, the surface smooth and glabrous, wider between anterior pair of legs; produced into prominent acute subcoxal spines at base of posterior pair of legs, the spines connected by the sharp-edged and overhanging posterior margin of the podosterna. Sternum of 4th segment with two small, erect, closely appressed processes; sternum of 5th segment with four distinct subconical tubercules, those of each pair almost in contact medially; sternum of segment 6 with two low indistinct paramedian knobs between the 6th pair of legs, sternum between 7th pair of legs depressed.

Legs long, most of femur visible from above when legs are extended laterad. Podomeres in decreasing order of length: 3–2–6–5–4–1, all are only sparingly setose except tarsus which is covered with numerous stout setae particularly near distal end. Coxae with sharp ventral spines; prefemora with the usual acute and slightly curved distal ventral spine. Pretarsi long, bisinuately curved, compressed and ellipsoidal in cross-section, with prominent thin carina on the dorsal side.

Prozonite of 7th segment reduced to a very thin, transverse strip by the large (3.8 mm wide) suboval gonopod aperature. Front edge of latter not elevated, caudal edge produced into a narrow elevated flange ex-

tending laterally to ends of the aperature; sternal surface between 8th pair of legs depressed and flat.

Gonopods large and massive in appearance, the telopodites overlapping in situ (Figs. 1 and 2), distal ends of the coxae exposed. Coxae robust, subpyriform, attached only by thickened membrane, of the form shown in Fig. 3, no coxal apophyses present; two macrosetae on the dorsal side. Telopodites short, not apparently divided into recognizable regions beyond the prefemur; latter short, nearly as broad as long, densely setose on the mesial surfaces, without trace of prefemoral process; distal half of telopodite lamellate, nearly glabrous, divided into two terminal branches enclosing a deep concavity. The smaller, dorsal branch (?tarsus) carries the seminal groove, distally it is slightly enlarged and finely laciniate; the much larger ventral branch (?tibia) is elongate-lanciform, basally setose, probably it functions as a protective solenophore.

Distribution: Central Georgia; so far known only from the type locality.